Volunteer Lake Assessment Program Individual Lake Reports
SUCCESS POND, SUCCESS, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,496	Max. Depth (m):	7.9	Flushing Rate (yr¹)	1.4	
Surface Area (Ac.):	290	Mean Depth (m):	3.8	P Retention Coef:	0.65	
Shore Length (m):	4,500	Volume (m³):	4,283,500	Elevation (ft):	1600	

TROPHIC CLASSIFICATION

| Year	Trophic class
2005	MESOTROPHIC
2008	MESOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the DRAFT 2014 305(b) report on the status of N.H. waters, and are based on data collected from 2004-2013. Detailed waterbody assessment and report card information can be found at www.des.nh.gov/organizations/divisions/water/wmb/swqa/index.htm

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Cautionary	The calculated median is fewer than 5 samples but > indicator and the chlorophyll a indicator is okay. More data needed.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Oxygen, Dissolved	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Dissolved oxygen satura	Encouraging	There are < 10 samples with 0 exceedances of criteria. More data needed.
	Chlorophyll-a	Cautionary	The calculated median is fewer than 5 samples but > indicator. More data needed.
Primary Contact Recreation	Escherichia coli	Very Good	Where there are no geometric means, all bacteria samples are < 75% of the geometric mean. Where there are geometric means all single bacteria samples are < the SSMC and all geometric means are < geometric mean criteria.
	Chlorophyll-a	Cautionary	There are < 10 samples with 1 exceedance of indicator. More data needed.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.
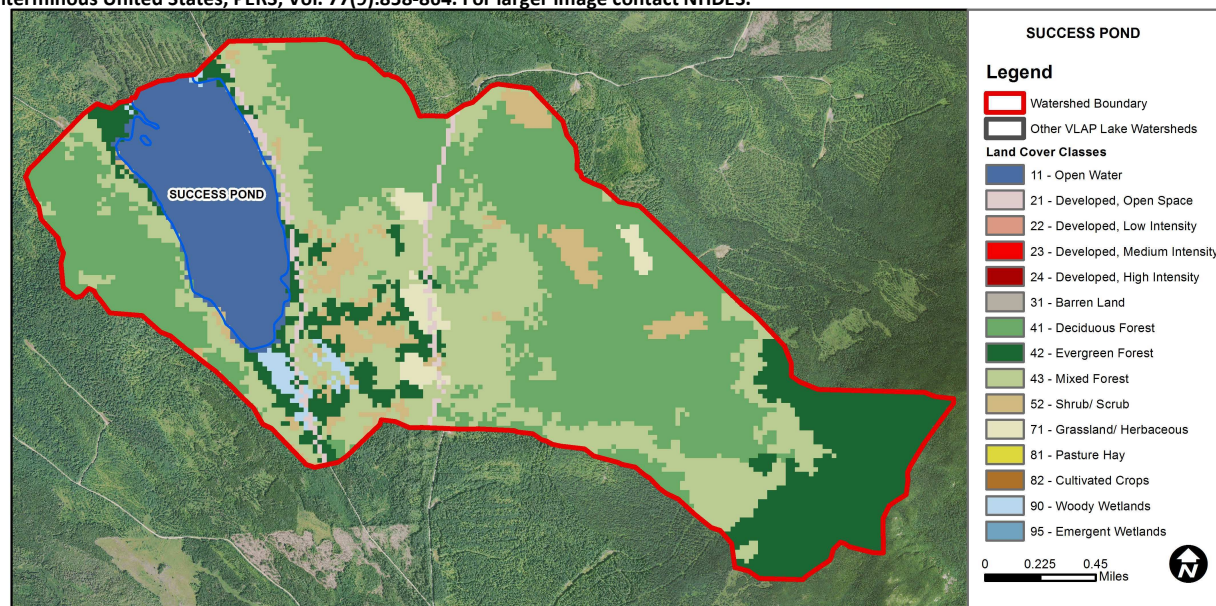
| Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	11.6	Barren Land	0	Grassland/Herbaceous	1.62
Developed-Open Space	1.52	Deciduous Forest	40.13	Pasture Hay	0
Developed-Low Intensity	0	Evergreen Forest	15.2	Cultivated Crops	0
Developed-Medium Intensity	0	Mixed Forest	24.2	Woody Wetlands	0.95
Developed-High Intensity	0	Shrub-Scrub	4.88	Emergent Wetlands	0

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics*)

- **CHLOROPHYLL-A:** Chlorophyll levels were slightly above average in July and slightly greater than the state median. However chlorophyll levels were less than the elevated levels measured in 2010 and 2011.
- **CONDUCTIVITY/CHLORIDE:** Deep spot, Inlet and Outlet conductivity levels were low and less than the state median. Epilimnetic (upper water layer) conductivity levels have remained stable since 2010.
- **E. COLI:** Beach E. coli levels were very low and much less than the state standard of 88 cts/100 mL for public beaches.
- **TOTAL PHOSPHORUS:** Deep spot, Inlet and Outlet phosphorus levels were low. Epilimnetic phosphorus levels were less than the state median and decreased slightly from 2013.
- **TRANSPARENCY:** Transparency was average for most lakes and approximately equal to the state median. Transparency measured with the viewscope (VS) was much better than that measured without (NVS) and likely a better representation of actual conditions.
- **TURBIDITY:** Epilimnetic turbidity was slightly elevated potentially due to algae in the water column. Metalimnetic (middle water layer) and hypolimnetic (lower water layer) turbidities were within normal ranges. Inlet and Outlet turbidities were low.
- **PH:** Epilimnetic and metalimnetic pH levels were within the desirable range 6.5-8.0 units. Hypolimnetic pH levels were slightly less than desirable.
- **RECOMMENDED ACTIONS:** Maintain monitoring program to better understand pond water quality. Increase monitoring frequency to once per month, typically June, July and August, to better assess seasonal and historical water quality trends and decrease data variability. The increased frequency and intensity of storm events highlights the importance of managing stormwater runoff from dirt/gravel roads, steep slopes, and agricultural property. DES' "NH Homeowner's Guide to Stormwater Management" is a great resource for lake residents. Keep up the great work!

Dissolved Oxygen & Temp Profile July, 2014
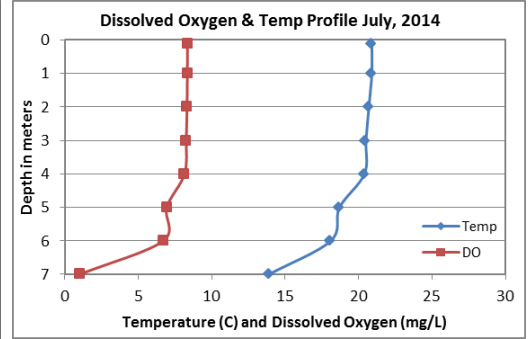
Station Name	Table 1. 2014 Average Water Quality Data for SUCCESS POND								
	Alk. mg/l	Chlor-a ug/l	Cond. uS/cm	E. Coli #/100ml	Total P ug/l	Trans. m		Turb. ntu	pH
						NVS	VS		
Epilimnion	6.1	5.41	21.2		7	3.30	4.28	1.72	6.79
Metalimnion			21.2		7			1.11	6.67
Hypolimnion			22.0		9			1.31	6.34
Beach				2					
Inlet			23.0		9			0.65	6.63
Outlet			20.5		6			0.90	6.89

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: > 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: between 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
Conductivity	N/A	Ten consecutive years of data necessary for analysis.	Chlorophyll-a	N/A	Ten consecutive years of data necessary for analysis.
pH (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.	Transparency	N/A	Ten consecutive years of data necessary for analysis.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary for analysis.

Historical Trend Epilimnetic Conductivty and pH

Historical Deep Spot Chlorophyll-a, Epilimnetic Total Phosphorus & Transparency Data